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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/849,023	05/20/2004	Takashi Nakano	2004-0770A	7039

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WASHINGTON, DC 20006-1021

EXAMINER

LEE, GILBERT Y

ART UNIT	PAPER NUMBER
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3673

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/849,023

Applicant(s)

NAKANO ET AL.

Examiner

Gilbert Y. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 5/4/05 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites "said thin plate assembly has a side edge...formed with a recess" and "a plate has a side surface formed with a stepped portion engageable with said recess". It is unclear to the examiner as to what has the recess and what has the stepped portion. For the purposes of this examination, the examiner is interpreting the claim to read as a thin plate having a side edge with a recess and a plate retaining ring having a stepped portion.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 6, 7, 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Mech (Fr. 2,650,048).

Regarding claim 6, the Mech reference discloses a shaft seal mechanism (Fig. 5) forming a leaf seal (e.g. 4) in an annular space (Fig. 5) between a rotor (1) and a stator (2), comprising:

a plurality of thin plates (4) lapped on one another in layers in a circumferential direction of the rotor and arranged in the annular space between the rotor and the stator so as to form a thin plate assembly of an annular shape (Fig. 4); and

a pair of flexible thin plate retaining rings (e.g. 5a and 5b) between which an outer circumferential proximal end side of each of said thin plates is pinched so as to be retained by said retaining rings (Fig. 5);

wherein said outer circumferential proximal end side of each of said thin plates is supported on a stator side (Fig. 5) and an inner circumferential distal end side of each of said thin plates is non-fixed to an outer circumferential surface of said rotor so that said thin plate assembly of annular shaped divides the annular space into a higher pressure side area (e.g. P1) and a lower pressure side area (e.g. P2).

Regarding claim 7, the Mech reference discloses a deviation preventing member (12) arranged between said outer circumferential proximal end side of said thin plates (Fig. 5). Note that the deviation preventing member of the Mech reference is capable of regulating motion of each of said thin plates relative to said thin plate retaining rings.

Regarding claim 10, the Mech reference discloses a shaft seal mechanism (Fig. 5) forming a leaf seal (e.g. 4) in an annular space (Fig. 5) between a rotor (1) and a stator (2), comprising:

a plurality of thin plates (4) lapped on one another in layers in a circumferential direction of the rotor and arranged in the annular space between the rotor and the stator so as to form a thin plate assembly of an annular shape (Fig. 4); wherein said outer circumferential proximal end side of each of said thin plates is supported on a stator side (Fig. 5) and an inner circumferential distal end side of each of said thin plates is non-fixed to an outer circumferential surface of said rotor so that said thin plate assembly of annular shaped divides the annular space into a higher pressure side area (e.g. P1) and a lower pressure side area (e.g. P2). MPEP 2113 Product-by-Process Claims states that "If the product in the product-by-process claim is that same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process." The process by which the thin plates are fixed to each other is not a patentable distinction.

Regarding claim 11, the Mech reference discloses a shaft seal mechanism (Fig. 5) forming a leaf seal (e.g. 4) in an annular space (Fig. 5) between a rotor (1) and a stator (2), comprising:

a plurality of thin plates (4), each of said thin plates having a length with an outer circumferential proximal end side at one end and an inner circumferential distal end side at an opposite end (Fig. 5), a width extending in an axial direction of said rotor (Fig. 5),

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and a thickness, wherein each of said thin plates is wider than it is thick at said inner circumferential distal end side (Fig. 4);

wherein said plurality of thin plates are lapped in a circumferential direction of the rotor to form a thin plate assembly in which said thin plates overlap each other in their thickness direction (Fig. 5); and

a pair of flexible thin plate retaining rings (e.g. 5a and 5b) between which said outer circumferential proximal end side of each of said thin plates is held so as to be retained by said retaining rings (Fig. 5);

wherein said outer circumferential proximal end side of each of said thin plates is supported on a stator side (Fig. 5) and an inner circumferential distal end side of each of said thin plates is non-fixed to an outer circumferential surface of said rotor so that said thin plate assembly of annular shaped divides the annular space into a higher pressure side area (e.g. P1) and a lower pressure side area (e.g. P2).

Regarding claim 12, the Mech reference discloses the thin plates having a length, width and thickness (Fig. 4), wherein each said width extends in an axial direction of the rotor (Fig. 5), and each said thickness extends in a direction in which said thin plates are lapped (Fig. 4), said width being greater than said thickness (Fig. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mech.

Regarding claim 8 and 9, the Mech reference disclose the invention substantially as claimed in claims 6 and 7.

However, the Mech reference fails to explicitly disclose the plates having a side surface having a recess and the plate retaining rings having a stepped portion engageable with said recess.

Fig. 2 of the Mech reference discloses the addition of a recess in the plates and a stepped portion on the plate retaining rings engaging the recess.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the thin plates with a recess and the plate retaining rings having a stepped portion engaging the recess to Fig. 5 of the Mech reference in order to provide more security for the thin plates.

Response to Arguments

5. Applicant's arguments with respect to claims 6-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gilbert Y. Lee whose telephone number is 571-272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.

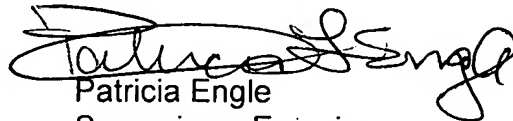
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL

October 28, 2006


Patricia Engle
Supervisory Examiner
Tech. Center 3600